Candidate Information

Position: Research Fellow - Visualisation for Audit Compliance
School/Department: School of Electronics, Electrical Engineering and Computer Science
Reference: 22/110389
Closing Date: Monday 21 November 2022
Salary: £35,333 per annum
Anticipated Interview Date: Tuesday 13 or Friday 16 December 2022
Duration: 3 years

JOB PURPOSE:

To be a highly productive, ambitious and collaborative member of the Advanced Research and Engineering centre within Northern Ireland. The Centre brings together expertise from PwC, University of Ulster and Queen's University Belfast.

The Research Fellow will join this vibrant network of collaborators assisting in the planning and delivery of the research activity specifically to develop experiments and prototypes at the frontier of artificial intelligence, human computer interaction and visualisation research. The Research Fellow will lead the development of the visualisation of audit data aligning to the specifications developed in conjunction with PwC. They will then experimentally assess the benefits of using such advanced technologies to enhance understanding of complicated data and compliance processes.

The post is a critical role, and as such, successful applicants will have responsibilities in independent research, supervision, planning, outreach and collaboration both internally and externally. You will need to engage with research topics and cover new domains quickly; build deep expertise with appropriate data, techniques and tools and apply high standards to the research code and systems you develop.

MAJOR DUTIES:

1. Undertake research under supervision within the specific research project and as a member of the collaborative research team contribute to develop 3D environments for visualisation and real time interaction and apply knowledge of relevant research domains along with expert coding skills to platform and framework development projects.
2. Develop/apply highly scalable algorithms based on state-of-the-art machine learning methodologies and design suitable human computer interaction user experimental studies.
3. Carry out analyses, experimental tests, critical evaluation and implementation, and interpretations of experimental data and the literature using methodologies and other techniques appropriate to area of research across a range of platforms and facilities of the wider PwC partnership.
4. Produce high quality research outputs consistent with project aims and commensurate with career stage. This will include collaborating and co-authoring with PI and project team (as appropriate) on outputs.
5. In consultation with the project team, promote research milestones and outputs at national and international conferences and through social media (where applicable).
6. Carry out occasional educational supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
7. Undertake supplementary duties relevant to the success of the project including administrative duties, presentation of regular progress reports and additional training and development activities as required.

ESSENTIAL CRITERIA:

1. 2.1 Honours Degree (or equivalent) in Applied Mathematics, Computer Science, Electronics, Electrical Engineering, or a closely related discipline.
2. Normally have or be about to obtain a PhD in Computer Science. Applied Mathematics, Electronics, Electrical Engineering, Physics.

3. Relevant experience to include:
   - At least 3 years research experience in at least one of: intelligent systems, artificial intelligence, algorithms development.
   - 3+ years of experience developing AR or VR systems.
   - Working effectively as part of a research team in the development and promotion of the research theme.
   - Unity debugging experience.
4. Evidence of knowledge of:
   - Scripting languages, Java or Python or C# , and proficient in C++ programming and of how to optimise software for specific headsets and platforms
   - Unity Game Engine and Editor
   - Typical algorithms used in AI.
5. Strong publication record, commensurate with stage of career.
6. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques.
7. Ability to contribute to broader management and administrative processes.
8. Contribute to the School's outreach programme by links with industry, community groups etc.
9. Practical problem solving skills, independence of thought and initiative.
10. Ability to assess and organise resources.
11. Ability to communicate complex information in English effectively in oral and written format to technical and non-technical audiences.
12. Ability to build relationships with a wide range of people and roles at different levels of seniority and to influence decision making.
13. Ability to manage self and prioritise workload.
14. A pro-active approach to work and team development.
15. Commitment to continuous professional development.
16. Ability to meet the mobility requirements of the post including the travel to project partners as required by the role.

DESIRABLE CRITERIA:
1. Strong background in software application development.
2. Experience of the application of AI algorithms and software in multidisciplinary activities.
3. Experience of developing and testing novel algorithms.